

Dear Manufacturer:

SUBJECT: Revised Engine Family Name and New Evaporative Family Name

EPA has finalized the proposed standardized engine family and evaporative family name formats that were discussed in my September 20, 1991 letter requesting comments. As proposed in my original letter, EPA will be updating computer programs to use the new name formats starting with the 1994 model year. The new engine and evaporative family names should be used by all classes of engine and vehicle manufacturers to describe light-duty vehicle and trucks, heavy-duty engines, and motorcycles as soon as EPA announces that 1994 computer data may be submitted.

The new EPA standardized name is similar to the previous format for light-duty vehicles. The 12-digit length has been maintained and the first six characters are unchanged. The balance of the format has been modified to better track the various types of vehicles and standards employed under the new rules necessitated by the Clean Air Act Amendments.

EPA received several comments regarding the proposed format and has made the appropriate changes to address the substantive concerns. The most frequent comment was a request to allow greater flexibility to separate engine families based on catalyst differences. The final format allows sufficient flexibility to accommodate up to 36 different catalyst configurations in a single engine (exceeding the requested flexibility). The codes for vehicle class and standards were slightly changed to improve clarity and the displacement field was modified to allow displacements from 0.01 to 99 liters.

When combining the light-duty manufacturers with heavy-duty and motorcycles it became necessary to change a few of the manufacturer sub-codes used in the past. The new codes are listed on the enclosed pages. These new codes should be used starting with the 1994 model year; the old codes should be used until that time.

AFMC:BONTEKOE:x8442:sk:x8581:2565 Plymouth Rd:11/18/91:CB#0194h

Details of the revised standardized engine family name and evaporative family name are contained on the enclosures. If you have any questions, please contact your certification team representative.

Sincerely,

Robert E. Maxwell, Director
Certification Division
Office of Mobile Sources

Enclosure

0194h

EPA Standardized Engine Family Names

Starting with the 1994 model year the standardized engine family name (to be used by all classes of vehicles and engines) is formatted as follows:

REFER TO FILE CD9108_1.PCX FOR GRAPHIC

First Character	Model Year (see subcodes for model year)
Characters 2 and 3	Letter code for manufacturer (see subcodes for manufacturers)
Characters 4,5,& 6	Displacement in liters (e.g., 5.7 --the decimal point counts as a digit) or cubic inches (e.g., 350). For dual displacement families enter the larger displacement. For large displacement engines, the displacement may be entered as XX. format (e.g., 12.). Small motor cycle engines may be entered in a .XX format (e.g., .07). In all case the displacement will be read in liters if a decimal point is entered and it will be read in cubic inches if there is no decimal point.
Character 7	Vehicle Class (See table)
Character 8	Fuel system and number of valves (See table)
Character 9	Combustion cycle and fuel (See table)
Character 10	Standards (See table)
Character 11	Catalyst, Trap (See table)
Character 12	OBD or ICI (See table)

SUBCODES FOR MODEL YEAR

CODE	YEAR
A	1980
B	1981
C	1982
D	1983
E	1984
F	1985
G	1986
H	1987
J	1988
K	1989
L	1990
M	1991
N	1992
P	1993
R	1994
S	1995
T	1996
V	1997
W	1998
X	1999
Y	2000
1	2001
2	2002
3	2003
4	2004
5	2005
6	2006
7	2007
8	2008
9	2009
A	2010
B	2011
C	2012

SUBCODES FOR MANUFACTURERS

Mfr Code	Manufacturer	Mfr Subcode
10	AMERICAN MOTORS	AM
20	CHRYSLER	CR
30	FORD	FM
40	GENERAL MOTORS	GC
	1G = GMPT CARS	
	3G = GMPT TRUCKS	
	4G = SATURN	
61	ACS VEHICLE SALES AND SERVICE	A1
62	ADELL IMPORTS	AL
66	RED SHIFT LTD.	A2
68	ARO OF NORTH AMERICA	A4
70	ASTON MARTIN	AS
90	ALFA-LANCIA	AR
96	AMG MOTORENBAU GMBH	AG
98	AURORA CARS	AA
99	AUSTRIAN MOTORS, LTD.	AN
101	AUTOKRAFT LIMITED	AK
103	ASC INC.	A3
108	AUSTIN-ROVER	AW
113	BASIL LEASE CORP.	B2
120	BMW	BM
122	BITTER	BT
124	BENNETT AUTO SALES	BN
127	BERTONE	BE
129	BRAZILIAN IMPORT	BZ
131	B&R WHOLESALE VEHICLES	B1
154	CLASSIC MOTORWORKS	CW
162	CONSULIER INDUSTRIES INC.	C3
167	CORVETTE AUTO SALES	C1
169	CX AUTOMOTIVE	CX
190	DAIHATSU MOTOR COMPANY LTD.	DH
196	DIAMOND STAR MOTORS	DS
197	DUTCHER MOTORS INC	DT
200	MERCEDES BENZ	MB
202	METRIC MOTORS	MM
203	MUES IMPORT EXPORT	MS
213	EUROCAR INC	EC
217	EUROWEST GRAND PRIX INC	EW
220	FERRARI	FE
222	EVANS AUTOMOBILES	E1
238	FOREIGN TRADE MARKETING INC	F1
246	GRUMMAN ALLIED INDUSTRIES	GR
260	HONDA	HN

263	H T AUTOMOTIVE ENGINEERING	HT
265	HYUNDAI	HY

Mfr Code	Manufacturer	Mfr Subcode
279	INTERNATIONAL MOTORS	NM
290	ISUZU	SZ
305	JAGUAR CARS INC	JC
308	JBA MOTORCARS INC	J1
315	J. M. MOTORS	JM
336	KE INTERNATIONAL AUTO CONSULTANT	K1
338	KIA MOTORS CORPORATION	KM
341	LAMBDA CONTROL SYSTEMS	LB
347	LIPHARDT & ASSOCIATES INC	LP
348	THE LONDON COACH CO., INC.	LC
350	LOTUS	LT
359	MCEVOY MOTORS	MY
360	MASERATI	MA
372	NORTH AMERICAN IMPORT/EXPORT	NA
376	NORTHEAST OHIO AXLE, INC.	NX
380	NISSAN	NS
395	722196 ONTARIO INC.	N2
402	ORION MOTORS	RN
406	THE PANTHER CAR COMPANY LTD.	PN
410	PEUGEOT	PE
417	PINZGAUER OF AMERICA	PZ
420	PORSCHE	PR
428	PROTON AMERICA, INC.	P1
430	RENAULT	RE
431	PROTOTYPE AUTOMOTIVE SERVICES	P2
439	RAYTON-FISSORE NORTH AMERICA	R1
440	ROLLS-ROYCE	RR
455	RUF AUTOMOBILES INTERNATIONAL	RF
460	LAND ROVER LTD	LR
470	SAAB	SA
481	SHELBY AUTOMOBILES INC	SY
490	MITSUBISHI	MT
491	MITSUBISHI MOTOR SALES AMERICA	M3
495	SATRA	SR
520	EXCALIBUR AUTOMOBILE	EX
537	SUN INTERNATIONAL	SN
540	SUZUKI	SK
543	700 SUNRISE BLVD LEASING INC	7S
545	TEXAS COACH COMPANY	TE
560	MAZDA MOTOR CORP.	TK
570	TOYOTA	TY

576	NEW UNITED MOTOR MFG INC	NT
579	UTILIMASTER CORP. OF AMERICA	Z1
588	VOLGA ASSOCIATED AUTOMOBILE WORK	VA
590	VOLKSWAGEN	VW
595	VILLAGE IMPORTS	VG
600	VOLVO	VV

Mfr Code	Manufacturer	Mfr Subcode
602	VIXEN MOTOR COMPANY	XN
604	THE WAYNE HARRIS GROUP	WH
607	WINDSOR-CONTINENTAL AUTO SALES	WC
614	YUGO AMERICA, INC.	YA
617	ZIMMER	ZM
618	ZAVODI CRVENA ZASTAVA	ZA
620	TVR	TV
640	AUDI	AD
660	FUJI HEAVY IND	FJ
691	LAMBORGHINI	N L
720	WINNEGABO	WB

Mfr Code	Heavy Duty Manufacturer	Mfr Subcode
112	Blue Birb Body Company	BB
735	Clarion Motors	CA
020	Chrysler	CR*
740	Cummins	CE
730	Caterpillar	CP*
055	Detroit Diesel	DD
180	DAF Truck B.V.	DF *
745	Klockner-Humboldt-Deutz AG	DZ
747	Fleetwood Enterprises	FW
030	Ford	FM
040	General Motors	GM
748	Gillig	GL
750	Hercules Engines	HE
250	Hino Motors	HM
743	Deere & Company	JD
762	MAN Nutzpahrzeuge	MN*
200	Mercedes-Benz Aktiengesellschaft	MB
440	Mitsubishi	MT*
760	Mack Trucks	MK*
380	Nissan Diesel Motor Co.	NS*
765	Navistar International Transportatuion	NV
767	Oshkosk Truck	S7*

770	Perkins Engine Company	PK*
775	Roadmaster	RM
430	Renault Vehicules Industriels	RE
470	Saab-Scania	SA
240	Isuzu Motors	SZ
755	IVECO B.V.	VE
600	Volvo White Truck Division	VT
795	Vironex	VX
720	Winnebago Industrials	WB

Mfr. Code	Motorcycles Manufacturer	Mfr Subcode
118	Bajaj Auto Limited	BJ
120	BMWAG	BM
735	Clarion Motors	CA
144	Cagiva North America	CG
157	Clifford Gun Traders & Supplies	CL
156	Classic Motorcycles Limited	CM
168	Cushman	CU
255	Harley-Davidson	HD
260	Honda	HN
335	Kawasaki	KA
333	KTM Motor	KT
358	Matchless Motor Cycles	ML*
394	OMC Lincoln	MC
369	Moto America	MG
332	Kavulich International	MN
366	Miller Specialties	MS
378	Neval Motorcycles	NY*
453	Roscetti Corp.	RC
540	Suzuki	SK
611	Westward Industries	WW
615	Yamaha	YM*

* The asterisked "Mfr. Subcodes" are changed from previous years

VEHICLE CLASS

LIGHT DUTY

SEE FILE CD9108_2.PCX

CARB's MEDIUM DUTY Only use for Calif-only vehicles

CODE	DESIGNATION	GVWR	A L V W
G	MDT-1	>6000	0-3750
H	MDT-2	>6000	3751-5750
J	MDT-3	>6000	5751-8500
K	MDT-4	>6000	8501-10,000
L	MDT-5	>6000	10,001-14,000

HEAVY DUTY

CODE	USEFUL LIFE	STANDARD	DESCRIPTION
A	LHDE	LIGHT DUTY	OPTION for < 10,000 GVWR
B	LHDE	<14K GVWR	Typically GVWR <19.5K, HP 70-170
C	LHDE	> 14K GVWR*	Typically GVWR < 19.5K, HP 70-170
D	MHDE	> 14K GVWR	Typically GVWR 19.5K -33K, HP 170 -250
E	HHDE	>14K GVWR	Typically GVWR >33K, HP, 250
F	HHDE	URBAN BUS	HHDE Bus
*also use this code for families containing both <14K and > 14K GVWR			

MOTORCYCLES

CODE	STANDARD	DISPLACEMENT
M	MC -CLASS I	50 -169 CC
N	MC -CLASS II	170 -279 CC
P	MC -CLASS III	2 280 CC

Miscellaneous

U CARB'S UTILITY ENGINE & LAWN/GARDEN

Fuel Metering and Valves per Cylinder

CODE	FUEL SYSTEM	VALVES PER CYLINDER
0	Mult. Carb	2 Valves/Cyl
	1 BBL	2 Valves/Cyl
2	2 BBL	2 Valves/Cyl
3	3 BBL	2 Valves/Cyl
4	4 BBL	2 Valves/Cyl
5	TBI	2 Valves/Cyl
6	Mechanical MPI	2 Valves/Cyl
7	Elec. MPI -simultaneous	2 Valves/Cyl
8	Elec. MPI -sequential	2 Valves/Cyl

9	Central Port Inj.	2 Valves/Cyl
A	Mult. Carb	3 or more Valves/Cyl
B	1 BBL	3 or more Valves/Cyl
C	2 BBL	3 or more Valves/Cyl
D	3 BBL	3 or more Valves/Cyl
E	4 BBL	3 or more Valves/Cyl
F	TBI	3 or more Valves/Cyl
G	Mechanical MPI	3 or more Valves/Cyl
H	Elec. MPI -simultaneous	3 or more Valves/Cyl
J	Elec. MPI -sequential	3 or more Valves/Cyl
K	Central Port Inj.	3 or more Valves/Cyl
Y	None (Electric)	
Z	Other (Contact EPA prior to use)	

COMBUSTION CYCLE AND FUEL

CODE	CYCLE	FUEL	
G	Otto Cycle (Sl)	Gasoline	Piston
M	Otto Cycle (Sl)	Methonal	Piston
E	Otto Cycle (Sl)	Ethanol	Piston
F	Otto Cycle (Sl)	Flexible Methanol-Gasoline	Piston
N	Otto Cycle (Sl)	Other Flexible	Piston
C	Otto Cycle (Sl)	CNG	Piston
L	Otto Cycle (Sl)	LPG	Piston
R	Otto Cycle (Sl)	Gasoline	Rotary
X	Otto Cycle (Sl)	Other Fuels	Rotary

D Diesel Cycle (Cl) Diesel Fuel
 A Diesel Cycle (Cl) Methonal
 B Diesel Cycle (Cl) Ethanol
 H Diesel Cycle (Cl) Flexible Methanol-Diesel
 J Diesel Cycle (Cl) Other Flexible
 K Diesel Cycle (Cl) CNG
 P Diesel Cycle (Cl) LPG

2 Two Stroke Cycle Gasoline
 3 Two Stroke Cycle Methonal/Ethanol
 4 Two Stroke Cycle Diesel
 5 Two Stroke Cycle CNG
 6 Two Stroke Cycle LPG

7 Two Stroke Cycle Flexible

T	Turbine	Gasoline
Q	Turbine	Diesel
S	Turbine	Methonal/Ethanol
U	Turbine	CNG
V	Turbine	LPG
W	Turbine	Flexible
Y	Hybrid Electric	
Z	Electric	

STANDARDS

49-STATE AND 50-STATE FAMILIES

CODE	SALES CLASS	HC. CO & NOx	PM	COLD CO	IN USE
A	49 OR 50 STATE	TIER 0	ANY	N	TIER 0
B	49 OR 50 STATE	TIER 0	ANY	Y	TIER 0
C	49 OR 50 STATE	TIER 1	TIER 0	N	TIER 11
D	49 OR 50 STATE	TIER 1	TIER 0	Y	TIER 11
E	49 OR 50 STATE	TIER 1	TIER 1	N	TIER 11
F	49 OR 50 STATE	TIER 1	TIER 1	Y	TIER 11
G	49 OR 50 STATE	TIER 1	TIER 0	N	TIER 1F
H	49 OR 50 STATE	TIER 1	TIER 0	Y	TIER 1F
J	49 OR 50 STATE	TIER 1	TIER 1	N	TIER 1F
K	49 OR 50 STATE	TIER 1	TIER 1	Y	TIER 1F

L-Z (RESERVED)

CALIFORNIA ONLY FAMILIES

- 0 CARB TIER 0
- 1 CARB TIER1
- 2 CARB TLEV
- 3 CARB LEV
- 4 CARB ULEV
- 5 CARB ZEV (ELECTRIC)

Note: Exact standards can usually be determined knowing the class of vehicle and the year of certification. However, for some years there are more than one standard effective and there are phase-in percentages required. The "standard" in the

above table identifies which standard applies.

Tier 0

LDV, LDT: As defined in regulations
HDE: Current Standards
MC: Current Standards

Tier 1

LDV, LDT: As defined in regulations
HDE: TBD
MC: Not applicable

CATALYST / TRAP

CODES*	CATALYST TYPE
A, B	Ox Cat Only
C, D	Reduction Cat
E, F, G, H	3-Way Cat
J, K, L, M	3-Way+Ox Cat
N, P, Q	Heated Cat
	No Cat

CODES*	TRAP TYPE
1, 2	Trap -Active Regeneration
3, 4	Trap-Continous Regeneration
5, 6	Trap-Continous Regeneration + Fuel Add.

CODES*	DESCRIPTION
Y, Z	Other (Contact EPA prior to use)

First code listed is preferred code, other codes may be selected if

necessary to separate engine families that would otherwise be named the same.

OBD -ICI PROD YEAR

CODES*	OBD Status
A to J (excluding 1)	For Federal: OBD = No For Calif only: CARB OBD I or OBD not applicable for CARB
K to T (excluding 0)	For Federal: OBD = Yes For Calif only: CARB OBD II

CODE	Special Compliance Options
U	NCP For Federal: OBD = No For Calif only: CARB OBD I or OBD not applicable for CARB
V	NCP For Federal: OBD = Yes For Calif only: CARB OBD II
W	Averaging or Bank/Trade, For Federal: OBD=No For Calif only: CARB OBD I or OBD not applicable for CARB
X	Averaging or Bank/Trade, For Federal: OBD = Yes For Calif only: CARB OBD II

First code listed is preferred code, other codes may be selected if necessary to separate engine families that would otherwise be named the same.

FOR INDEPENDENT COMMERCIAL IMPORTER'S ONLY

- 5 Production year is 5 years earlier than Cert. MY
- 4 Production year is 4 years earlier than Cert. MY

- 3 Production year is 3 years earlier than Cert. MY
- 2 Production year is 2 years earlier than Cert. MY
- Production year is 1 year earlier than Cert. MY
- 0 Production year is same year as Cert. MY

EVAPORATIVE FAMILY NAME

SEE FILE CD9108_3.PCX

Character 1 YEAR: Same as Engine Family

Character 2 & 3 MANUFACTURER: Same as Engine Family

Character 4 VAPOR STORAGE SYSTEM:
 1 = Canister
 2 = Crankcase
 3 = Air Cleaner
 4 = Canister & Crankcase
 5 = Crankcase & Air Cleaner
 6 = Canister & Air Cleaner
 7 = Canister & Crankcase & Air Cleaner

Characters 5, 6, & 7 CANISTER WORK CAPACITY: Total Grams (All Cansiters)

Character 8 CANISTER CONFIGURATION & PURGE CONTROL:
 A = Plastic Housing -Closed Bottom -Purge
controlled
 B = Plastic Housing -Open Bottom -Purge controlled
 C = Metal Housing -Closed Bottom -Purge controlled
 D = Metal Housing -Open Bottom -Purge controlled
controlled
 W = Plastic Housing -Closed Bottom -Purge not
controlled
 X = Plastic Housing -Open Bottom -Purge not
controlled
 Y = Metal Housing -Closed Bottom -Purge not
controlled
 Z= Metal Housing -Open Bottom -Purge not controlled

Character 9 FUEL SYSTEM:
 N = Carburetor (any type)
 Y = Fuel Injection (any type)

Character 10 FUEL TANK MATERIAL:
 M = Metal
 P= Plastic
 C = Both metal & plastic tanks (contact EPA prior
to use)

Character 11 STANDARD:

0 = Tier 0 (Current Standards)
1 = Tier 1 (TBD)

Character 12

SUFFIX: Wildcard (Enter any value)